

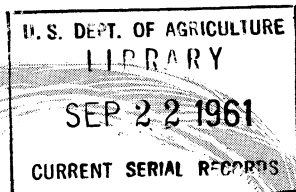
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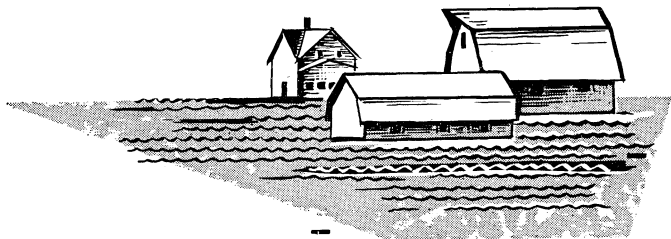
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FARMERS' BULLETIN 2107

**DEFENSE
AGAINST**



Radioactive Fallout on the farm



U. S. DEPARTMENT OF AGRICULTURE

If we were attacked with nuclear weapons (atomic or hydrogen bombs), you, the American farmer, would be counted on to supply the food and fiber needed to keep the economy going. One of the problems you might face in doing this important job is radioactive fallout.

This bulletin contains the recommendations of scientists, engineers, public health officials, civil defense authorities, and other specialists. Study of the effect of radioactive fallout on agriculture is a continuing project. Some of the recommendations in this bulletin may have to be changed in the light of future research.

In the event of enemy attack, first provide for your own safety and that of your family and neighbors. To do this, you may not be able, at first, to take care of your livestock, your crops, and your land.

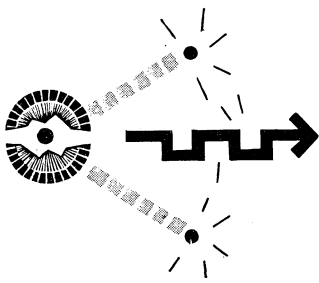
Your best protection from fallout is a specially constructed shelter. If there is a civil defense emergency and you have not yet built a shelter in your home, go to the safest place you have, such as a cyclone cellar, a root cellar or a corner of your basement. Shield doors, windows, and other openings with dense materials such as concrete blocks, bricks, or sandbags if you have them. If you do not have an underground refuge, at least stay indoors. Covering the

floor above with a foot or more of sandbags or loose soil would be very helpful. Shield yourself with as much dense material as possible.

Local civil defense authorities will make every effort to let you know when it is safe to come out of shelter. Emergency information will be disseminated to the public in every possible way, including the CONELRAD system, 640 or 1240 on your radio dial. This emergency system of broadcasting is described further on page 7.

Designs of five different types of inexpensive family fallout shelters—one of them a “do-it-yourself” type—are presented in a publication on family fallout shelters, available from your local civil defense office, or by mail from “Box Home Shelter,” Battle Creek, Michigan.

Additional pointers on protection are given on pages 14 and 15.



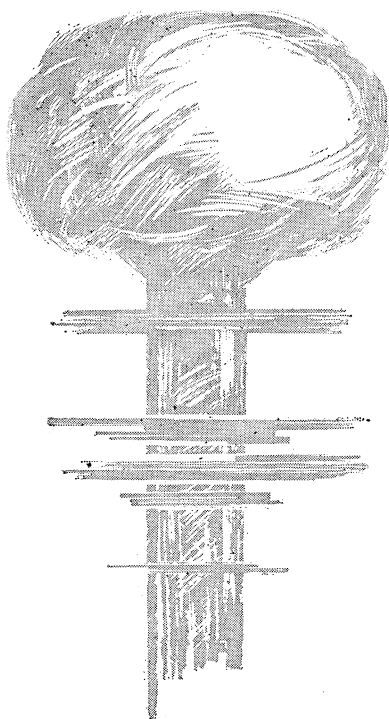
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DEFENSE AGAINST

Radioactive Fallout on the farm

FALLOUT: *BACKGROUND*



Most Americans know about the destructive power of atomic and hydrogen bombs and other nuclear weapons. The explosive power of the atomic bombs used in World War II was equivalent to about 20,000 tons of TNT. Since then, bombs have been developed that have explosive power equivalent to millions of tons of TNT.

An enemy attack with a nuclear weapon could cause radioactive contamination many miles downwind from the target area. Radioactive material produced by the bomb gives off destructive rays or particles, which can injure—or kill—human beings and animals, and can make farmlands and crops dangerous to use. This material, when it falls to the earth, is called radioactive fallout.

Fallout could settle anywhere—even in the most remote parts of the country. If large industrial centers were bombed with nuclear weapons, it is likely that small towns and rural areas in the downwind path would be endangered.

Fallout, if significant, will be visible on polished or smooth surfaces, but the radiation from the active elements can be detected accurately only by special instruments. Because of this, your government is responsible for warning you through regular and emergency channels when your lands lie within the path of harmful radioactive contamination.

There is a defense against fallout—on the farm and in the home. The following questions and answers will help you to understand the nature of fallout, and, in the event of enemy attack, will help you to protect yourself from it.

What is radioactivity?

It is a process whereby certain elements disintegrate, and in so doing release one or more types of powerful electrical rays like X-rays or eject infinitely small particles of matter.

Radioactivity is nothing new. All living things are constantly exposed to small amounts of radiation. Cosmic rays from space continually pass through our bodies. We breathe and eat radioactive materials that occur naturally in the soil, water, and air. We also are exposed to radiation when we have X-ray examinations. But explosions of nuclear bombs produce large amounts of radioactive elements that can affect the health of human beings and animals. NOTE: *In the United States nuclear tests, precautions are taken to protect the public against the hazard of fallout.*

What happens when a nuclear bomb explodes?

The explosion of an atomic or hydrogen bomb is accompanied by *blast*, *heat*, *initial radiation*, and *residual radiation*. The first three occur almost instantaneously with the explosion, and are destructive at the target area and for some miles around.

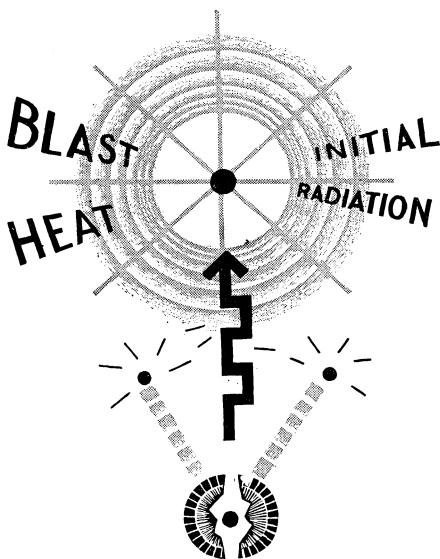
The fourth—residual radiation, which comes mostly from fallout—has a delayed and longer effect, and may be dangerous over a considerably larger area.

What is fallout?

Fallout is the term used to describe radioactive material produced by a nuclear explosion, that falls to earth from the upper air. When a bomb explodes *close to the earth*, large quantities of pulverized soil are drawn up into the ascending cloud. After mixing with the highly radioactive material of the bomb, the finely divided soil falls back to earth and produces radioactive contamination. The coarse parts of this material fall close to the point of the explosion; the remainder may drift downwind, the very finest for many miles—possibly for hundreds of miles—before settling to earth.

Significant amounts of fallout do not arrive outside the blast area earlier than about $\frac{1}{2}$ hour after an explosion, the time depending upon weather conditions at and after the time of detonation.

From then on, it begins to cover an increasingly large area and may





eventually blanket thousands of square miles if the bomb was large and the winds are strong. At any given location, however, the time between the beginning and end of deposition usually is less than 8 to 10 hours.

Why is fallout dangerous?

If an area is highly contaminated by fallout, the radiation may be a threat to human beings, animals, and crops. Fallout can also contaminate food, water, buildings, yards, and fields, and make them unsafe to use for varying periods of time.

Some of the rays can penetrate the body and cause serious internal damage. The particles, alpha and beta, while not capable of deep penetration, can burn if fallout material is deposited on the skin. Some of the radioactive chemical elements in fallout, such as radioactive strontium and radioactive iodine, can cause serious internal radiation damage if taken into the body in sufficiently large quantities.

To understand the nature of fallout, it is necessary to know that fallout

contains a mixture of long-lived and short-lived materials, each of which loses activity, or decays, at a specific rate. Scientists usually measure the decay rate by the half-life of the material. The half-life is the time required for one-half of the radioactivity of a material to be given off or decay.

Radioactive strontium is among the most important of the long-lived group. Radioactive iodine is an example of an important, relatively short-lived substance.

Chemically, strontium is similar to calcium; after it enters the body, it tends to collect in the bones. Radioactive strontium has a half-life of about 28 years—it continues to lose one-half of its remaining radioactivity during each 28-year period that passes—and sufficient amounts of it in the body can cause bone cancer, and can damage tissue.

Radioactive iodine has a half-life of about 8 days, and therefore is dangerous for a much shorter time than radioactive strontium. After radioactive iodine enters the body, it tends to collect in the thyroid gland. If too much of it is present in the

body, particularly of a young person, it may cause cancer of the thyroid gland and otherwise seriously damage the thyroid cells. It is secreted in the milk of cattle, thus becoming a serious threat to persons drinking milk from *grazing cows* during the first few weeks after fallout occurs.

What determines the size of the fallout area?

Fallout can be a serious hazard to communities that are miles beyond the areas affected by the explosion. During a 1954 test at the Eniwetok Proving Grounds in the Pacific, the area where fallout would have seriously threatened the lives of nearly all persons who took no protective measures extended about 140 miles downwind from the point of explosion, and was up to 20 miles wide.

The extent and location of a fallout area are determined by—

1. Altitude of the bomb burst.
2. Power and design of the bomb.
3. Size of the fallout particles.
4. Atmospheric conditions—including precipitation and direction and speed of winds from the surface up to 80,000 feet.
5. The nature of the ground surface.

Because of the variety of factors, it is not possible to estimate accurately the fallout hazard in advance. However, the area of probable fallout and the speed with which fallout will arrive can be estimated. These forecasts are released daily by the U.S. Weather Bureau on a routine basis and are available to Civil Defense authorities.

After a bomb is exploded close to the ground, the large radioactive cloud rises to a high level in the atmosphere. Some of the pulverized soil particles are blown downwind and crosswind, in the area of the target. Strong winds may spread fallout over long distances downwind.

Raindrops and snowflakes forming in or passing through contaminated



air collect fallout. Fallout that would spread over wide areas during dry weather quickly comes to earth.

Hills, valleys, and slopes probably have no great effect on the distribution of fallout, but large mountains and ridges receive a high concentration of fallout on the side facing the surface wind. Wherever possible, radiation intensity should be checked in the local areas.

How long is fallout dangerous?

The greatest hazard from radiation exists during the first few days—especially during the first 10 hours—following heavy deposit of fallout. The hazard decreases with the passage of time as radioactive materials decay and the intensity of radiation decreases.

The particles reaching the ground soon after the burst are highly radioactive, while those that remain in the air for longer periods lose much of their radioactivity by decay before they settle to earth. Twenty-four hours after an explosion the average per-hour rate of radiation coming from fallout is about 2 percent of the rate 1 hour after the explosion. But even this amount of radiation can be

dangerous if fallout is heavy. Long half-life radioactive substances, such as strontium 90, are referred to on page 5.

How can I protect my family and myself from radiation?

The only way to protect yourself from radiation is to stay away from it.

You can limit exposure by staying in an adequate shelter; three or more feet of packed earth or concrete provide excellent shielding from radiation. The walls of an ordinary frame house give some protection—they will stop about half of the radiation.

If time and conditions permit, local Civil Defense authorities may call for evacuation to safer areas.

How will I know if fallout is coming?

If an enemy attacks, official information and instructions will be issued by all available means of communication. If the radio and TV stations you normally listen to go off the air, try to get

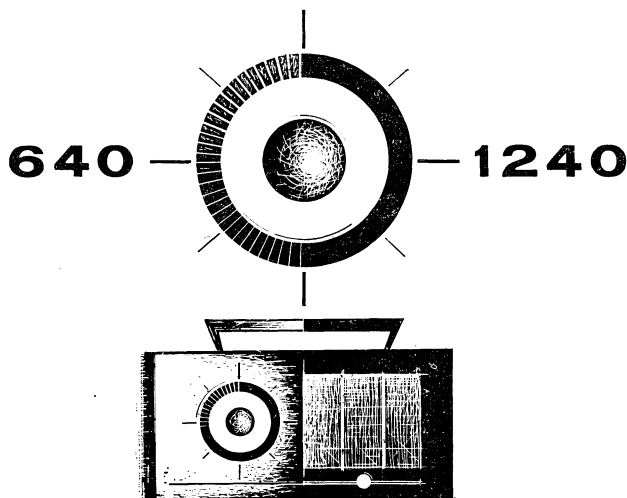
640 or 1240, the CONELRAD frequencies, on your radio dial. If you are not within range of a CONELRAD station, follow whatever preattack instructions you have received from your local, county, or State officials.

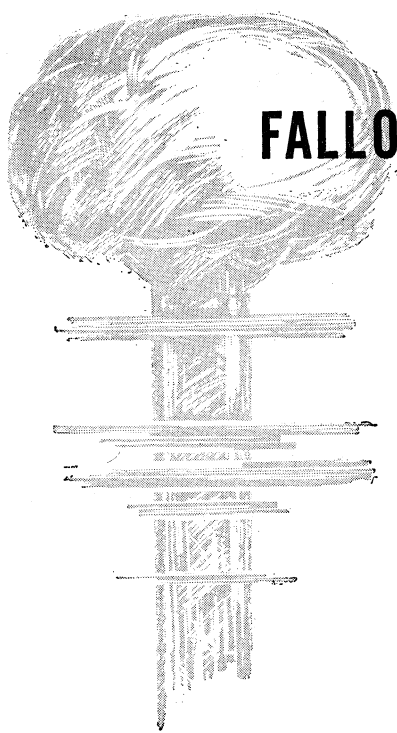
Later, you will receive information based on the findings of local civil defense radiological monitors, who will conduct surveys in the areas involved. The monitors will measure radiation from the fallout with suitable instruments to determine what further precautions, if any, should be taken.

Following an attack, take cover at any time a perceptible amount of "dust" can be seen collecting on polished surfaces. Any fallout that can be seen is dangerous, at least in the early hours after arrival.

Remember! Fallout is odorless.

Radiation can be detected and measured only with proper instruments. However, after nuclear attack, dust clouds or unusual dust concentrations in the atmosphere should be assumed to be radioactive until they have been officially surveyed with instruments and found not to be radioactive.





FALLOUT: LIVESTOCK

How will fallout affect unprotected livestock—that is, animals in fields, pastures, and other open areas?

Fallout may be dangerous to cattle, sheep, horses, pigs, and other livestock as well as to human beings. Animals can suffer skin burns if fallout settles in the coat. If animals drink fallout in their water or eat it in their feed, the radiation may cause serious internal injury or death. Radioactive materials that contaminate the skin or the immediate environment give off rays that can penetrate deep into the body. This is the major source of danger for livestock.

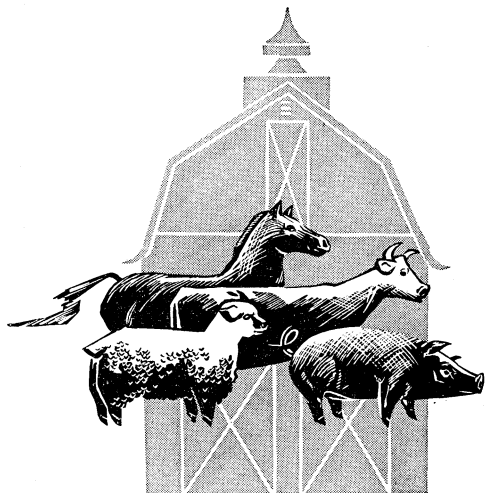
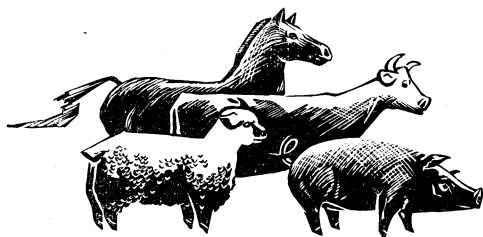
How will fallout affect sheltered livestock?

Livestock housed in barns and other farm buildings during fallout stand a better chance of surviving the effects of radiation than those that are not sheltered. A reasonably well-built shelter prevents fallout from settling on the animals' bodies and may reduce the intensity of external radiation; it also keeps the animals from eating contaminated feed.

What is the best way to protect livestock from fallout?

Move them indoors as soon as possible, and keep them off contaminated feed and water. If you do not have adequate facilities to house livestock, put them near farm buildings or in a small drylot. Once fallout occurs, you should not attempt to protect livestock unless local civil defense authorities tell you that it is safe to do so.

Get your dairy cattle under cover first. (See page 9.)



What water and feed can I give livestock after fallout?

Water from a covered well, tank, or cistern, or from a freely running spring, should be safe. If possible, use water from a covered well.

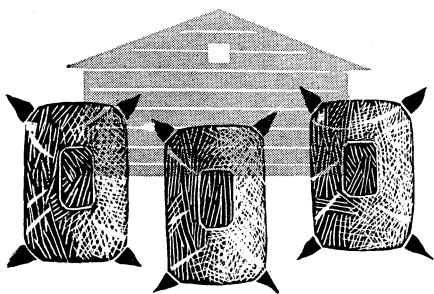
River water is more likely to be contaminated. However, most of the fallout will be removed if it is filtered through sand or if it was muddy and the mud is settled out. Pond water is less safe, but if necessary, it can be used a few days after fallout has occurred.

To prevent contamination from fallout, do not add water to covered tanks, except water from a properly protected well or spring, until the water originally present is used.

Give your livestock feed that has not been exposed to fallout. If the particles settle on hay, silage, or a stack of feedbags, they will contaminate only the outer portions. You can remove the outer layers or bags, and use the inside feed that is unaffected. However, do not handle contaminated feed until told by authorities that it is safe to do so, and be sure to follow the precautions they may recommend.

Farmers will be notified if local civil defense authorities measuring concentrations of fallout consider forage that is growing in an area to be harmful, but this advice might come too late in the more heavily contaminated areas. As a precautionary measure, it is best to house the livestock without giving them access to forage.

You may have to give cows contaminated feed if no other feed is available. Although the milk from these cows may not be usable, once the cows are back on clean feed the amount of radioactive material in their milk will progressively diminish. Authorities will measure fallout in affected areas and warn farmers when milk is unsafe. But, again, such warning likely will come latest in the areas where contamination is heaviest.



What can I do with contaminated feed?

You may be able to feed it to livestock eventually. Because of radioactive decay, contaminated feed may become safe to use after a period of storage. How long feed should be stored depends on the type and concentration of the radioactive materials. Farmers will be notified by local civil defense authorities.

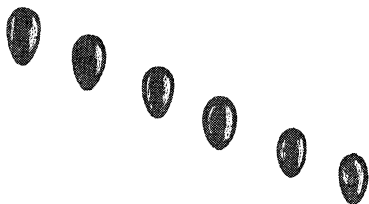
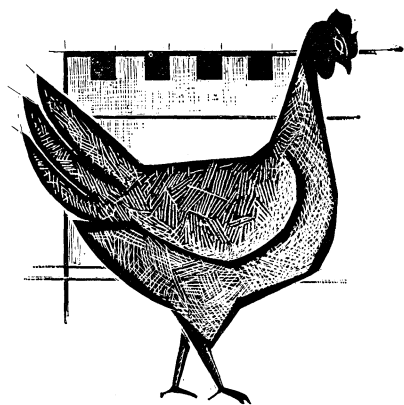
Should dairy cows receive special treatment?

Yes. Because radioactive materials can accumulate in milk, which will be a very critical product during an emergency, you should make a special effort to protect cows from fallout.

Give cows preferred shelter and clean feed and water. If you can, milk them before fallout occurs. You may not be able to do so for several days afterward. Reduce amounts of water and concentrated feed to maintenance levels. If practicable, put cows and suckling calves together; the calves can suckle and reduce the discomfort of full udders.

What measures should be taken to protect poultry?

Measures for protecting poultry are the same as those recommended for other farm animals. Flocks housed in concrete buildings would be better protected from fallout than those housed in wooden buildings.



Radioactive materials might show up in the eggs if hens eat contaminated feed. But most of the radioactive strontium will collect in the shells; very little will collect in the yolk and in the white.

What animal food products are safe to market after fallout?

You will receive specific instructions from local civil defense authorities based on the amount of fallout received. *Do not destroy any animal food products unless spoilage has made them inedible.* Milk from the fallout area should not be used as human food until approval from civil defense authorities is obtained. Other contaminated food products may be safe for consumption if they can be stored for a period of time to allow the radioactivity to decay.

What do I do if animals die from fallout?

Some of your animals may be affected so severely from fallout that

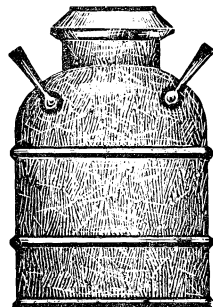
they will die in a few days or weeks after being exposed. Others will be unthrifty; they may have to be slaughtered. *Do not slaughter any of your livestock unless you are told to do so by local civil defense authorities.*

If animals die from fallout, you can safely bury them. These carcasses usually are not dangerous to surviving people or animals. Special instructions for your protection while handling contaminated carcasses may be issued by authorities if fallout is heavy.

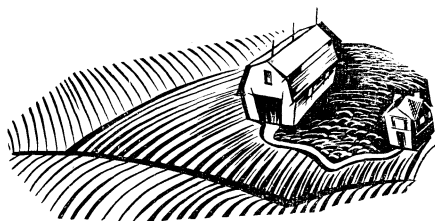
Is it possible to decontaminate livestock and farm buildings that have been exposed to fallout?

If there is fallout on the animals' skins, some of the radioactive material can be washed off with water. Civil defense authorities may advise you to hose down animals and to clean stables, barns, and other farm buildings. They will also tell you when it is safe to do these things. In handling animals, wear coveralls, gloves, and boots to prevent contaminating yourself. Cleaning or disinfecting buildings will not destroy radioactivity. However, cleaning can be useful in moving radioactive materials to a place where radiation will be less harmful. In cleaning, be careful to avoid contaminating yourself.

Caution: Before animals are hosed down or buildings cleaned, a thorough check should be made of possible radiation hazards to the person performing the task.



FALLOUT: LAND AND CROPS



What are the main consequences of heavy concentration of fallout on crop and pasture lands?

1. Farm workers may not be able to manage and cultivate land safely for some time because of radiation hazard.

2. It may not be advisable to permit animals to graze because of the danger of internal and external radiation.

3. Radioactive materials that are deposited on the edible portions of plants or absorbed through the roots are a potential long-term hazard to human beings and animals.

How long would fallout affect cultivated and noncultivated lands?

It would depend on the abundance and type of radioactive materials in a given area.

Radioactive strontium—a long-lived material—could affect soils and plants for decades. Because it is chemically similar to calcium, it would be absorbed by all plants. Plants growing in soils deficient in calcium would absorb more radioactive strontium than those growing in soils abundant in calcium, other conditions being equal.

Are there treatments for reducing the fallout hazard on land?

Yes. You can treat lands to reduce the fallout hazard after external radiation levels are low enough to go outdoors and work.

FOR FURTHER INFORMATION . . .

Family Shelters for Protection Against Radioactive Fallout. OCDM technical bulletin, TB-5-3, May 1958.—Provides guidance in planning family shelters for protection against the effects of radioactive fallout.

Fire Fighting for Householders. OCDM public booklet, PAB-4, revised May 1958.—Tells what starts fires, how they spread, and what can be done to control them. Points out that firefighting in homes and neighborhoods in event of enemy attack may be largely up to individuals.

First Aid: Emergency Kit, Emergency Action. OCDM leaflet L-2-12, revised April 1958.—Tells what should be included in a home emergency kit and how to use each item; also describes emergency life-saving actions.

Home Protection Exercises. OCDM miscellaneous publication, MP-2-1.—Presents a family-action program for preparation to meet the effects of natural disaster or enemy attack.

Individual and Family Preparedness. OCDM National Plan Appendix, NP-2-1. Presents basic survival needs and protective actions for individuals and families.

You may obtain copies of these publications from your nearest civil defense office or from the Office of Civil and Defense Mobilization, Battle Creek, Mich.

Cultivation will further reduce external radiation levels. If circumstances warrant, fallout can be completely removed from land, by scraping off a few inches of soil. If such drastic measures are resorted to, the scraped-off soil should be piled on unused land that drains away from your water supply.

Other treatments include: Liming of strongly acid and moderately acid soils; leaching porous soils with water; and plowing deep the surface layer of the soil.

It probably would be impossible to decontaminate rangelands and those croplands that are not very intensively used.

Would fallout permanently affect pasture grass?

A heavy deposit of fallout would spread short-lived and long-lived radioactive particles on the pasture. The existing growth would be affected by particles that have fallen on the exposed portions of the plants; succeeding growths, following grazing or mowing, would be affected internally from the long-lived radioactive materials absorbed from the soil. There probably would be no visible injury to the plants from the radiation.

Could I ever use contaminated pasture grass?

If fallout is very light, the pasture would be usable immediately. If fallout is heavy, the existing growth should be removed as close to the ground as possible and discarded in an area that drains away from your water supply. On acid soils, lime before reseeding.

An alternative is to allow livestock to graze on lightly contaminated

pasture after a period of denial that varies from one to a few weeks, the length of time depending on the degree of contamination.

Once it is safe to work the land, a periodic check on pasture and produce in affected areas will provide the best guide as to their use.

Will fallout affect my system of farming?

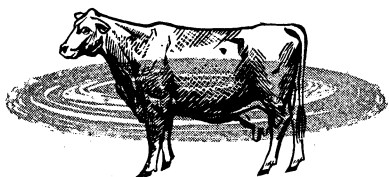
It could. If your land is seriously contaminated, it may be necessary to change to nonfood crops or to food crops that do not absorb large amounts of radioactive materials from the soil. Alfalfa, clover, soybeans, and leafy vegetables have a greater tendency to absorb long-lived radioactive strontium than cereal grains, corn, potatoes, and fruits.

Would fallout reduce the economic productivity of crop and pasture lands?

Fallout might reduce such productivity in several ways: (1) Crop and soil management would be impeded because of the danger of external radiation; (2) crops would become contaminated and unmarketable; and (3) some lower-income crops that do not absorb large quantities of radioactive material from the soil would be substituted for higher-income crops that do.

Could I use water in an exposed field?

Water in an exposed field would be contaminated; the hazard in using it would depend on the concentration of fallout.



Usually, there would be a prompt diffusion of the radioactive materials in the water, reducing the contamination at the surface. If the water were being constantly replenished from an uncontaminated source, radioactivity would be diluted rapidly.

What are the effects of fallout on growing vegetables?

Growing vegetables that are exposed to heavy fallout may become highly radioactive. Leaves, pods, and fruits are immediately contaminated upon contact with the radioactive particles.

Roots and tubers absorb little contamination from fallout before it is mixed with the soil; therefore they should be eaten first in preference to any other foods. Underground vegetables that have come in contact with contaminated surface soil during harvest should be washed and tested for radioactivity before marketing. *Many vegetables would be marketable, and none should be destroyed without testing for radioactivity.*

What are the effects of fallout on growing fruit, including green fruit and ripe fruit?

If fallout is heavy, ripe fruits may be lost because of the personal hazard involved in harvesting them. Fruits that do not have to be picked immediately and are peeled before eating can be saved. They can be decontaminated by washing before marketing.

Orchard trees should be maintained, and the fruits examined for radioactivity before and after harvest.

What effect would fallout have on alfalfa and other forage crops?

Existing growths of alfalfa and other forage crops might not be usable because of radiation hazard. Radioactivity would be less in subsequent growths. If a radiation survey indicates that the contamination level is high, the existing growth should be removed as close to the ground as possible and discarded, and only succeeding growths used after examination for radioactivity. It may be necessary to plow deep and reseed to grass. Application of lime may also be necessary if the soil is acid.

Would fallout limit the use of plants for human food?

It depends on the extent of the radioactivity.

Leafy vegetables, such as lettuce, should not be eaten unless they are thoroughly washed, and are known to be free of hazardous amounts of radioactive materials.

What special precautions should be taken for workers in the fields?

Everyone should remain indoors until the danger from fallout has diminished. When you are advised by local officials that it is safe to work outdoors, you may be asked to take certain precautions against collecting dust on your body, such as wearing boots, coat, hat, and gloves. If you work with livestock, touch them as little as possible; fallout may be on their backs.

FALLOUT:

MORE POINTERS ON PROTECTION

What you can do now . . .

- Build a family fallout shelter. . . . Maintain a 2-week emergency supply of food and water in or near your shelter area. . . . Obtain a disaster first aid kit and store it in your shelter. . . . Obtain a battery radio and an outside aerial to be used in your shelter during emergency. . . . Obtain a radiation-detection instrument.
- Plan an additional emergency water supply and a sewage disposal method for your home shelter area that do not depend on outside electric power. Remember, a spring or deep well may be useless if the pump depends on public power supplies.
- Prepare an evacuation kit for your automobile with food, water, first aid kit, battery radio, and blankets.

If you have a few hours' warning . . .

- Make arrangements for the safety of your family and yourself.
- Confine all livestock, preferably to buildings, or at least in drylot.
- Bring feed into buildings, or cover it with tarpaulin if it is left outdoors.
- Store as much water as possible for livestock, especially if the water is coming from ponds or streams or through water mains. Cover wells, rainbarrels, and tanks.
- If any time for preparation remains, move farm machinery and equipment indoors or store them near the farmhouse and keep them covered.
- Especially, place decontamination equipment—broom, hose, sprayer, and tractor with scraper or plow—where it will be handy for use when you emerge from shelter.

If you have a few months' warning . . .

If civil defense authorities are able to give the public a few months' warning that a nuclear attack is likely, here are some things that you can do:

- Put your silage pits and haystacks near buildings and cover them with tarpaulins.
- Keep your well clean and covered. Put some rainwater barrels and other containers near buildings; fill them regularly with clean water and keep them covered.
- Store seed and grain in weather-proof buildings.
- Stock up on packaged, canned, and bottled foods.



- Have a satisfactory storage space for fuel and maintain an emergency supply.

- Make sure that you have a place to confine livestock and poultry, preferably a place that has an overhead cover.

During and after fallout ..

- *Remain indoors until you are told by civil defense authorities that the danger from fallout can be tolerated.*

- Wash hands and face and change clothing immediately if you have been exposed to high concentrations of fallout.

- Use packaged, canned, and bottled foods, as well as food protected by storage and refrigeration; they are least likely to be contaminated. If it becomes necessary to use other foods, the following information should be helpful:

Milk—Safe to use if cows have not been exposed to fallout. May be safe to use if cows have been exposed to fallout but are being fed uncontaminated feed.

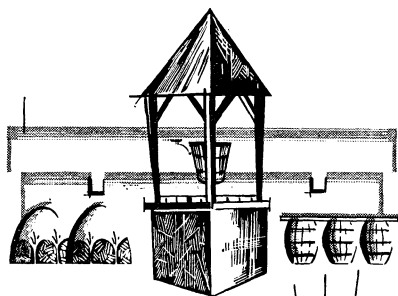
Eggs—Safe to use even if poultry have been exposed to small amounts of fallout.

Potatoes and Root Crops—Safe to use if they are washed and peeled.

Green Vegetables—Choose garden vegetables with solid hearts—cabbage, lettuce, etc. Before eating, remove several layers of the outer leaves, and wash the hearts thoroughly. Wear rubber gloves when removing the outer leaves.

Peas and Beans—Only the pods would be contaminated; the peas and beans are safe to use. Wash pods thoroughly before you remove them.

- Wash hands thoroughly before you eat.



- Wear protective clothing—hat, coat, boots, gloves—the first few days you work outdoors. If you are plowing or cultivating dry land, or if you are harvesting corn, wear a dust filter over your nose and mouth; even a handkerchief will be of some value.

This bulletin was prepared by Agricultural Research Service, U.S. Department of Agriculture, in cooperation with the Atomic Energy Commission, the Office of Civil and Defense Mobilization, and the U.S. Public Health Service. It deals with radioactive contamination conditions that may exist following the explosion of nuclear weapons during war. It does not relate to conditions that result from the testing of nuclear weapons. In such testing, the amount of radioactive contamination is kept within limits considered to be compatible with public health.

Washington, D.C.

Revised April 1961



Growth Through Agricultural Progress

The U.S. Department of Agriculture has produced two motion picture films on defense and radioactive fallout:

Fallout and Agriculture (16 mm., sound, color, 23 minutes)

Rural Community Defense (16 mm., sound, black-and-white, 13½ minutes)

These films are available for loan from the film library of your State land-grant college. For the address of the college in your State, write to Motion Picture Service, Office of Information, U.S. Department of Agriculture, Washington 25, D.C.

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. Price 10 cents